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A STUDY OF THE FERTILITY DECISION MAKING PROCESS AMONG THAI WOMEN

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CHAPTER I

INTRODUCTION

Objective

The general objective of the present study is to investigate how Thai women make decisions with regard to fertility behavior, and what the factors are which influence these decisions. The design of the present study is ex post facto in nature, trying to explain fertility behavior only after a varying number of births have already been given by the women in our sample.

Research which attempts to understand human behavior through the process of decision making and reasoning often has its challengers. Despite our scientific advances, exact observations of human mental conditions are extremely difficult. Facing this difficulty, very little research in demography attempts to explain fertility from the perspective of decision making and reasoning. The general argument against such a design of study that attempts to understand the mentality of women with regard to fertility behaviors, rests primarily upon the following point: it is possible to conceive of a reason being given without a consequent action, and of an action made for several different reasons. While recognizing this argument, for the purpose of this study the emphasis is placed on the latter point, that fertility behaviors like many other human behaviors can be explained by several different reasons, each of which is tenable for only a particular set of socio-economic conditions. Keeping our stated objective in mind, this study is designed to seek an understanding of why people want children: what are the special joys and rewards that couples envision in the parental role.

Background and Significance of the Study

In comparison with the experience of a number of other developing countries, reproductive behavior in Thailand has undergone a major transformation in a relatively short space of time. Recent demographic surveys in Thailand indicate that fertility rates declined dramatically during the 1970s (see e.g. Knodel and Debavalya, 1978). Total fertility rates as high as 6.25 during the years 1964-65 declined to 3.7 at the end of 1978 (Suvanajata and Kamnuansilpa, 1979).

Very few observers would have predicted the magnitude of change that actually occurred. This so-called "reproductive revolution" in Thailand needs a theoretical basis for understanding the rapid fertility decline within the context of Thai society. Theorizing from a demographic point of view, a decline in the national fertility rate possibly be explained by several factors. Among them, the most important of all are the roles of age structure, nuptiality patterns, trends in breast-feeding, reduction in infant mortality and knowledge and practice of birth control.

In the case of Thailand, changes in the age and marital status distributions appear to be minimal during the period of fertility decline. Both the proportion of the population that comprises women in the reproductive ages and the age distribution within the reproductive span have remained relatively stable between 1960 and 1975. The singulate mean age of marriage, an estimate of the age at first marriage derived from the proportions of those single, indicate similar results from various sources (National Research Council Panel on Thailand, 1980). Considering the evidence that there has been no significant change in the age structure and marriage patterns since 1960, fertility decline in Thailand cannot be explained in this way.

Among the most important determinants of fertility in the absence of deliberate birth control are lactation practices (Bongaarts, 1978). The contraceptive effects of breastfeeding is well documented.

Prolonged lactation protects against pregnancy by delaying the return of ovulation. Thus changes in breastfeeding practices could potentially have a significant effect on fertility. A recently completed study has clearly documented a moderate and relatively steady decline in the extent of breastfeeding (Knodel and Debavalya, 1980). Since the expected effect of a reduction in breastfeeding would be to increase fertility if other factors remained unchanged, the decline in fertility in Thailand cannot be explained by changes in breastfeeding. The main reason why fertility did not increase as a result of reduced breastfeeding is that a massive increase in contraceptive use occurred at the same time. Evidence from the surveys clearly indicates that the recent decline in fertility in Thailand has been accompanied by a dramatic increase in the knowledge and practice of contraception. (Knodel and Debavalya, 1978 and Suvanajata and Kamnuansilpa, 1979).

In most countries, the period of fertility decline was preceded and accompanied by an improvement in mortality conditions. One recent set of estimates of mortality in Thailand indicates a fairly steady decline in the crude death rate since 1920, with the exception of the turbulent years during the Second World War (ESCAP, 1976). An important component of the improved mortality, since 1960 at least, has been a reduction in infant and child mortality (National Research Council Panel on Thailand, 1980). This reduction of infant mortality may have some effect on fertility. As parents become more certain that they will have enough number of children around in their old age, they may start to limit the number of births. The limitation of number of births in many cases corresponds with the actual desire for a lower number of children than ever before. As contraception is becoming more prevalent, the married couples have more control of their family size. The reasons leading to the decision to have a small family size, however, is unclear to us. Equally perplexing are those couples who, in the midst of changing family size norms from large to small, desire to maintain their size at the traditional high level.

With the background of fertility decline provided here, one can visualize the importance of this study. On the theoretical side, it will help generate a theory for explaining fertility behavior. On the actual usage, we consider that since the decline of fertility in Thailand is explained mostly by the widespread practices of contraception, the understanding of the decision making process or the rationale leading to the desire or lack of desire for a large family may help in the recruitment of contraceptive adoptors, which is an important factor in the success of the population control program. Without the knowledge and understanding of why some women want to limit their family size, the recruitment of contraceptive adoptors may have to be carried out randomly and purely on the basis of nonspecific propaganda, rather than on specific and effective campaigning.

Brief Review of Related Literature

A review of research on fertility indicates that, within the past 30 years, most studies have focused and documented fertility differentials on the basis of numerous socio-economic and demographic variables. For example, studies conducted by Freedman, et. al. (1959) and Westoff and his associates, (Westoff, Potter, and Sagi, 1963; Westoff, Potter, Sagi and Mishler, 1961) found an inverse relation between education and fertility among Protestants as well as higher fertility among the Catholics, relative to non-Catholics. There have also been the relatively plentiful data on differential fertility by social class or socio-economic status. Summaries of such data appeared in the works of many people. For example Wrong (1958 and 1960), Johnson (1960), Kiser (1960) and Glass (1968) all showed the negative relationship between fertility and socio-economic status. Similar studies were also conducted in less developed countries. In Thailand, for example, Knodel and Prachuabmoh (1973) and Goldstein (1972) found an inverse relationship between fertility and women's education, especially among urban women. Goldstein (1970) found considerable differences in fertility among Buddhists, Moslems and Confucianists. Knodel and Prachuabmoh

(1973), using the Material Possessions Score as an indication of wealth, found that a simple inverse relationship between fertility and wealth did not emerge. When controlling for the effects of age and residence, women in rural households with the highest material possessions scores have approximately average fertility among the younger women, well below average fertility among the women 30-44 years of age, and well above average fertility among the older women. In contrast, women in urban households with the highest material possessions score, consistently have the lowest fertility for all three age groups although the difference between the lowest and highest is minimal for wives aged 45 and over. In addition, in all three urban age groups, the mean number of children ever born follows a curvilinear path by rising and then falling as they pass from the lowest material possessions score category to the highest.

Taking all these studies into consideration, certainly they have greatly advanced our understanding of demographic and social correlates of fertility. However, they are far from informatively satisfying. We do not fully understand why people of certain socio-economic and demographic characteristics have a particular level of fertility.

The studies of demographic and social correlates of fertility can be more intelligible to ourselves only when we can hypothesize an intervening mechanism. In sociological studies of fertility, it is generally almost certain that this mechanism can be detected from information on the mental states of women: the feelings and decisions that they have taken. The implicit assumption here is that individual fertility decisions are influenced by several interacting intervening mechanisms, which can be unraveled through the inquiry of the decision process made by an individual. Thus, only after understanding these mental states do we feel that we have adequately explained the fertility behavior.

Discouragingly, attempts to understand and explain fertility differentials in terms of psychological factors have not penetrated the mentality of women (e.g. Kiser and Whelpton, 1958; Westoff et. al., 1961; Westoff et. al., 1963; Westoff and Potvin, 1967; Bumpass and Westoff, 1971), thus having less theoretical merit than those studies of social correlates. The work by a number of investigators, however, can be taken to defend the theoretical merit of the social psychological studies. Among these, Rainwater (1965) in particular, suggested that demographic variables by and of themselves cannot explain why people want or do not want a child. Essentially, his contribution lies in both documenting the rationale behind fertility behavior and also in ferreting out the social psychological forces that effect the decision. Moreover, at one point, he dealt with the culture and social system within the subgroup which differentially influenced fertility behavior. Described in great detail in the book entitled, And the Poor Get Children, Rainwater and Weinstein (1960) documented the social preconditions for mental states among a sample of lower-class white couples in Chicago and Cincinnati that led to ineffective contraception-high fertility. Furthermore, his research interestingly showed that the segregated conjugal role relationship characterized by poor communication induces poor contraception. For many working-class couples, the lack of communication was the force that obliterated the fully conscious rationale.

The research by Rainwater (1965) and Rainwater and Weinstein (1960) are two important contributions, since they not only help understand fertility-related behavior but also determine the process by which group norms, social and economic conditions operate through mentality. This significance of Rainwater's contribution has been mentioned in Jaccard and Davidson (1976), who have adopted Fishbein's (1972) model and a social psychological approach in understanding fertility decisions. Their data strongly supported the hypothesis that a woman's intention to engage in a fertility-related behavior would be highly correlated with (a) her beliefs about the consequences of performing that behavior weighted by the value of those consequences, and/or (b) her beliefs about what significant others think she should do and her motivation to comply with those others.

Their study has been successfully focused on the identification of variables that determine intentions to engage in fertility-related behaviors. However, the question of the fit between the intention and actual behavior remains challenging. In fact this issue was the predominant theme in social psychology in the late 1960s. Unfortunately, the development in social science has not advanced enough to the point where we can perfectly predict the overt behavior from intention. This issue however, will be carefully guarded and will have minimal relevance to this study, as we are looking at the total decision process by which the women decided to have or not to have children. The attention here is placed not on the issue of prediction, but the explanation of child bearing behavior in an ex post facto manner.

Some Theoretical Explanations of Fertility Decisions

Early theoretical works' attempt to explain fertility were macroscopic in nature and based on an observation of the historical evidences of demographic and socioeconomic development of the western world during the nineteenth century and the first half of the twentieth. The theories hypothesizing a negative correlation of economic and social development and fertility were more or less generally accepted by demographers until the 1960s. At the same time the idea of a positive correlation of income or economic conditions and fertility also made regular appearances (Andorka, 1978). The line of reasoning of the early theories was followed by the new formulations of the so-called economic theory of fertility. The two basic tenets of this theory are that:

1. Couples behave in a rational way when they decide on the number of children they want to have.
2. Children are viewed by the couples more or less as consumption goods.

The economic theory has gained acceptance quite widely and has given rise to two main conflicting but interesting hypotheses. If based on some observations of consumption patterns of individuals with different income levels, it is hypothesized that individuals with a higher income level will always be associated with a more or less higher number of children per family. This hypothesis is impressive and very elegant when we look into the logic of consumption decisions derived from plotting the indifference curves and budget lines (see Andorka, 1978). Furthermore, it has the advantage of integrating the theory of fertility into the broader decuctive economic theory of consumer choices, or--as it has been recently called--the theory of household production and consumption. The problem, however, is how to reconcile it with not just the hypothesis of the negative relationship between income and fertility but with the actual known cases of societies or social strata where families with higher incomes have lower fertility than those having lower income. Several theorists of this economic theory of fertility have attempted various solutions to this dilemma.

Becker (1960) provided the simplest explanation. In his opinion the most important factor causing the apparent negative relation of income and fertility is the level of information on methods of birth control. Population groups of lower income can be assumed to be less informed on contraceptive methods, and therefore practice very little contraception, if any. It is also assumed that populations having a lower income have more children than they actually want. If, however, in the future all population groups were equally well informed on birth control on positive relation would prevail.

Interestingly, it is thought that in the absence of differences of knowledge on contraception, all couples will behave and calculate in the same rational way when they plan their purchases of consumer durables. They take into consideration the cost or price of the goods and of the children, as well as their disposable income.

Becker also introduced the idea of quality of children to account for the decisions of the couples. It seems that he assumed that just like consumer durables, all couples want the quality of their children. Therefore, parents having a higher income not only want more children, but also spend more money per child in order to enhance their quality. Obviously it is imaginable that couples with higher income want so spend all their extra money on the improvement of the quality of a given number of children and do not want to have more children. Becker, however, seems to have assumed that this is not the case; the couples with higher income wanting more and at the same time better quality children. He seems to overlook that there is a fundamental distinction between the prices of children and the commodities that regulate the decision of how much money to spend on the quality of children. While the price of commodities is identical for households at different income levels, the price of the quality of children is a function of the family income and status. Okun (1958) considered that the minimum cost per child is lower for low income and low status families than it is for high income and high status families, because children cannot be brought up at a much lower level of living than that of their parents. If the cost of children is higher at the higher income levels, it may well be that the couples will decide to have a smaller number of children at a higher income level.

Leibenstein (1974), who was the first to formulate the new economic theory of fertility, looked at the decision to have any number of children from the perspective of the utility of children. According to him there are three types of utility for which a child is wanted: (1) consumption utility, i.e. the child as a source of personal pleasure of the parents, (2) work or income utility, i.e. the benefits derived from the fact that the child sooner or later enters the labor force and provides help either on the farm or in the workshop of the family, or earns an income to add to the common fund of the household, and (3) the security utility, derived from the fact that the child will be a potential source of security and help for the parents, especially in old age. While there are

utilities, there are also costs or disutilities of children. The two types of costs or disutilities are: direct and indirect costs. The direct costs involve, for example, feeding, housing and providing education for children. The indirect costs frequently may be considered as opportunity costs, arising from, for example, the income earning foregone by the parents because of the efforts needed to raise the child. Leibenstein also considered that, while the consumption utility of the child does not change when income rises, both work and security utility decrease, because at a higher level of income children are educated for a longer period and therefore enter the labor force later, and because it is possible to assure other sources of security for the parents. Direct costs in money terms certainly increase with income, but it is not certain whether the disutility of bearing these costs also increases in terms of the utility of the goods given up to bear these costs (at higher income). On the other hand, the indirect costs could be very important at higher income levels, because the couples might be obliged to give up important earning activities and very desirable consumption activities such as recreation.

Also from Leibenstein's work, an assumption can be made that marginal utilities of the nth child are lower than those of the (n-1)th child. When parents decide the number of children they want, they compare the expected utilities and disutilities and decide to have the nth child if the utilities are higher than disutilities.

If the slope of the utility and disutility functions of the nth child and (n-1)th child are similar to those in the figure given by Leibenstein (1974), then the couples at a lower income level may want to have more children (n) than at a higher income level (n-1). However, it might be conceived that the disutilities of children decrease at higher income levels, because the utilities that must be foregone due to the larger number of children are less important at these higher income levels, and in that case the representative couple may want more children at a higher income level. Therefore the curves of the utility and disutility of children will be of a different slope.

Mincer (1963) developed the line of reasoning further, emphasizing the importance of indirect costs. He stressed that any consumption might entail opportunity, the most important of all being the time spent in connection with consumption (of children). Obviously the pleasure of having (or consuming) children requires a great deal of time, most of all from the side of the mother, who for that reason may have to forgo income from gainful employment. The relinquished income of the wife who bears and cares for children might not have been a very important cost for those with low education, who could attain only very low wages, but for those with high education the additional earning of the wife might be a very important component of the income of the family.

The economic theory of fertility has been strongly criticized by several demographers. Blake (1968a), for example, suggested that children cannot be considered analogous to consumer durables for several reasons. First, parents are obliged to provide a certain standard of care and education for their children; and they are condemned by public opinion if they have so many children that they cannot provide this standard. Therefore adults are not as free to choose the number of their children as they are in deciding whether or not to buy certain consumer durables. Second, parents are not able to choose the quality of their children, since this depends on many other (e.g. genetics) factors in addition to care and education. Third, where parents are not satisfied with the number and quality of their children, they are not free to change them, as they may change consumer durables if they are not satisfied with them. Fourth, parents are not free to use (and abuse) their children, as they are free concerning the use of their consumer durables. Parents are socially and legally required to adequately care for their children. Fifth, the costs of children are misinterpreted by Becker, since on the one hand they include the indirect or opportunity costs of the time required for their care, and on the other hand the direct costs of children are also differentiated by social strata because of the different standards accepted by them. Therefore a positive relation of fertility to

income is most improbable. According to Blake, "fertility is determined by the characteristics of family and the general norms and values attributed to the concept of family in the given society, and the more fundamental changes of fertility are caused by the change of the institution of family, therefore a theory of reproductive motivation is at the same time a theory of the family and society" (p. 24).

Following the economic theory of fertility and the critique of it by Blake, Easterlin (1969) developed a theoretical framework in which he tried to combine the points of view of the economic and sociological theories.

According to Easterlin, fertility is the result of deliberate choices taken by the couple, similar to other decisions on consumption, production and earning activities. Thus the number of children of the couple is also determined by their income, the prices (costs) of children and other goods and their tastes. The preference for the number of children should be viewed along with the household's desires for other goods.

Easterlin's concept of income, however, is somewhat different from those of Becker's original theory. It is not the income observed at any point in time that influences the decisions on fertility of the household. Rather, these decisions are governed by the long-term income prospects, or the potential income.

The concept of costs of children is also refined by Easterlin. He does not agree with Duesenberry (1960), who considered that these costs are higher for rich families. He believes that these costs are more or less identical; and the higher expenditures per child in rich families is a reflection of the preference for better quality children and the higher income available for spending on children. In his cost concept, he considers that costs should include the opportunity costs of the time needed for taking care of children. Obviously, a woman who has a large family must spend much time on the children, and therefore has less time left for either earning activities or recreation. This cost might be measured by the income she could achieve by being employed during the time she spends on child care.

Interestingly, Easterlin saw a dual effect of potential income on fertility. On one hand, the rise in potential income tends to increase fertility, but on the other hand, by being employed the opportunity costs of child care are increased, which tends to diminish fertility. The two effects might be called income effect (a greater number of children can be achieved with higher income) and substitution effect (at higher income levels couples can find alternatives to child care). If the substitution effect outweighs the income effect, it may lead to negative relation of fertility of income, as found by some investigators.

Another interesting point of Easterlin is that he did not consider that unwanted pregnancies are simply the consequences of lack of knowledge on contraception, as supposed by Becker. He hypothesized that people are more or less universally aware of methods of fertility control. Since he also introduced an element of costs of contraception into the theory, his explanation for high fertility in some couples lies in the psychological costs of contraception. Some couples might consider that it is more worthwhile to take the risk of another pregnancy than to accept the annoyances connected with fertility control.

The most important innovation of Easterlin in the economic theory of fertility is that he considered tastes to be different for individual families, social strata, denominational or ethnic groups, etc. Tastes as considered by Easterlin tend to be varied and changing over time, moulded by socialization, by education, and in general by the influence of social environment during the whole span of life. Leibenstein (1976) later refined Easterlin's conceptual framework by adding that, in addition to the influence of the parental family, peer groups might also influence the tastes, or aspirations of young couples (in Leibenstein expressions).

Leibenstein distinguished between committed income and that portion of income immediately available for expenditures. It might happen that committed income for the fulfilment of aspirations concerning living standard and social status is rising more rapidly than total income; in that case the number of children declines.

Similarly, Oppenheimer (1976) considered that consumption aspirations are formed not only during adolescence in the parental family but also in adult life. He believed that changes in the direction of more activeness in women's economic roles will help perpetuate low fertility. Part of the reason is that, relative to the former generation of the baby boom period, wives of younger generations participated in the labor force because of the aspiration to raise the family's level of living.

By considering tastes to be dynamic, Easterlin has introduced the basic characteristics of the sociological approach into the study of fertility. In his opinion, social norms are the conceptual equivalents of tastes. However, Hawthorn (1970) did not agree and stated that a taste is like a desire for something, and should be more similar to the concepts of values.

So much for the economic and sociological theories of fertility. Recently, a psychological approach to studying fertility has been developed (see Fawcett, 1973). Although the results so far are still hypothetical and quite often contradictory, its characteristic of being interdisciplinary in nature seems promising.

Several psychoanalysts and authors in related fields have dealt with the desire to have a child (Benedek, 1959; Erikson, 1964; Kestenberg, 1965a, 1965b and 1968). Pohlman (1969) offered some psychoanalytical explanations for the desire to have a child, among which were (see also in Andorka, 1978: 333):

1. Having a child fulfils the need of men to show virility.
2. A woman can compete with her mother by having a baby.
3. Husbands may want their wives to suffer with pregnancy, childbirth and child care to atone for their own guilt.

4. The child is considered an extension of the ego and may satisfy the desire for immortality.

The problem with Pohman's explanations is that they only explain the desire to have a child or children in general but not the desire to have few or many.

Another theory that tries to explain the size of family by psychological factors uses the concepts of alienation and modernization, both considered to be characteristics of advanced societies. Hoffman and Wyatt (1960) hypothesized that the increasing alienation and loneliness of men and women in modern mass societies enhance the value of the family and of children, since they might alleviate these feelings by providing companionship and a sense of life. Hoffman and Wyatt also pointed to two other developments in modern society that favor large families. Increase in the status of women through labor force participation can mean that the household no longer provides a meaningful role for them. In these conditions, having a child, or an additional child when the older ones need less maternal care, provides an escape from both the dull housewife role and the problematical working wife role. At the same time a growing emphasis on the importance of the parental role reinforces the desirability of this escape role. Thus according to this theory, some psychological factors developed in advanced societies favor a rise in fertility.

On the other hand, the modernization theory posits that the development of societies in the direction of increasing modernization both at the societal level and individual level leads to a decline in fertility (Fawcett and Bornstein, 1973). Modernization is considered to be a syndrome of personality traits, among which can be listed: readiness for new experiences and openess to innovation and change; opinions of others not automatically accepted or rejected on the basis of their status or power; time orientation towards the present and future, rather than the past; acceptance of fixed hours, punctuality; orientation towards planning; a belief that man can dominate his environment to achieve his goals; faith in science and technology. It has been hypothesized that the

spread of these traits in developing socieites has been paralled with the decline in fertility during demographic transition. However, the empirical researches performed in advanced societies, particularly in the United States, were not very successful in finding correlations between fertility and personality traits.

Recently, Hoffman and Hoffman (1973) elaborated a scheme for the psychological value of children. The following eight psychological benefits of children were given:

1. The birth of a child assures the adult status and adult social identity of the parents. This status and identity may need reconfirmation by subsequent births.
2. Children may give feelings of expansion of self for the parents, of immortality, of a tie to a larger society or community.
3. Children help to develop the feeling in the parents that they are moral, altruistic, following the commands of their religion, doing good for their social group; women having children are tended to be viewed as "good women," more faithful to their husbands.
4. The birth of children strengthens the nuclear family, the one important primary group in advanced societies that has permanence and therefore serves as a bulwark against impersonalization and loneliness. Children especially are apt to fulfil the needs for affection of parents, particularly perhaps of women.
5. Children are a source of constant stimulation, novelty and fun for parents.
6. Rearing of children provides an outlet for creativity, achievement and accomplishment. Needs for such activities are probably emerging more and more strongly in advanced societies, as basic subsistence needs are satisfied for most families within society.

7. The birth of a child enhances the power of the parent in the kinship group, enhances the position of the mother vis-a-vis the husband, and even vis-a-vis her own parents. At the same time, the children afford both parents opportunities for another form of power namely, to guide, teach, control and influence them.

8. Children may enhance the prestige of parents in the larger primary groups to which they belong.

The East-West Population Institute in Hawaii recently engaged in a survey of the value of children and looked at the value of children from the point of both advantages and disadvantages. The advantages of children were coded as:

1. Happiness, love and companionship provided by the existence of children.

2. Personal development of the parents.

3. Child rearing satisfactions.

4. Economic benefits and security.

5. Benefits for the nuclear family unit.

6. Benefits for the larger kin group.

7. Social and religious values.

8. Intrinsic value of having children.

The disadvantages of having children were coded as:

1. Financial costs.

2. Emotional costs.

3. Restrictions on alternative activities (career, recreation, etc.)

4. Problems caused in marriage.

5. Costs for the kin group.

6. Societal costs, overpopulation.

The review of the theoretical explanation of fertility behaviors advanced in this section suggests that several sociological, economic and psychological factors may have been interwoven in the decision of people to have any number of children. Unlike in other living species, having a child or an offspring has almost been a conscious, calculated and rational behavior of man within the marriage unions. In spite of these generalization we still need more research to uncover the reasons that lead more specifically and deeply to the understanding of the decisions to have a different number of children among different married couples. The present research is only one such attempt.

CHAPTER II

METHODOLOGY

Sample Design

A ,major goal in the design of sampling in this study was to obtain reliable data for understanding fertility decisions, or reasons which led to the desire to have children. To achieve that end, data for this research were collected from a sample of 305 ever-married women from two provinces, selected on the basis of fertility rates, i.e. one with high growth and the other with low growth. The two selected provinces are Nongkai and Lumpoon. According to our calculation from the data on death and birth registrations, Nongkai ranked among one of the highest population growth areas. In 1977 the growth rate of Nongkai was 2.7 percent per annum, as compared to only 0.7 percent for Lumpoon. The differences in terms of fertility rates of the two provinces should provide some interesting points of comparison in the way women make decisions regarding having children.

Multi-stage sampling techniques were employed in the selection of respondents in this study. More specifically, the selection process, after selection of the sample provinces, comprised three stages. A brief description of each of these stages follows. First, in each province three districts were drawn, with the stipulation that one of them had to be Muang district, while the other two were randomly selected. The inclusion of Muang district stemmed from the reason that we wanted to stratify our sample areas into three gradients of urbanization, namely: provincial urban area or municpal area, sanitary district (area) and rural area. Administratively, each municipal area, the place classified as urban in Thailand, is located in Muang district. Thus Muang district had to be selected before we could select the respondents in the provincial urban center.

In the second stage, after selection of the districts, cluster samples were employed within each district; sampling lists of eligible women were conducted at this level to provide a sample frame for the selection of respondents.

In the final stage the respondents were randomly selected from among eligible women in each cluster selected in the second stage. The probability of being included in the sample was, however, not equal for each cluster, because the number of selected women were restricted to the quota of approximately 150 women for each province, or approximately 50 for each urban center, sanitary district and rural area. It should be noted that the sample design of this study was not intended to provide estimates of any parameters at either the national or subnational levels. Rather, the design is aimed at understanding fertility decisions, after taking into consideration the differences in group fertility behavior.

Activities in the Field

The field work for the research was carried out between May 15 and June 30, 1979, by a team of six interviewers, one supervisor and two project investigators. In all two selected provinces the team stayed either in the provincial or district town until all the interviews were completed. If the interviewers were unable to complete an interview after three call backs, a previously selected substitute respondent was interviewed. Substitute respondents were selected at the time of the selection of the original sample. The average duration of an interview was 30 minutes.

Some measures of quality control were observed during the field work. In the early stage of the field work the supervisor and project investigators closely observed the interviews and provided assistance when the interviewer or the respondent failed to communicate effectively. The interviewers were instructed to submit the completed questionnaires to the supervisors daily, and all questionnaires were examined carefully to identify errors in data entry, as well as inconsistent or doubtful responses.

Field supervisors reinterviewed some respondents to verify interview results. This was done more frequently when responses were omitted or there were major inconsistencies. Spot checks were also made during the field work to be sure that the interviewers were following the correct sample selection procedure.

Coding and Editing

After the field work the questionnaires were sent to the Research Center, National Institute of Development Administration, for editing, punching, and further data processing.

All punched cards were edited by computer. Editing instructions were prepared, and the editing program was written. It included the following steps:

1. List all cards to see that the number of cards is correct;
2. Check that only legitimate codes appear in each column and that no "wild" codes are present;
3. Check the logical consistency of codes between columns and cards.

The editing was done step by step. A mistake in each step was corrected before beginning the next step. After the machine editing, the frequency distributions of all variables were determined and reviewed to identify any unusual responses.

Characteristics of the Sample

A brief summary of the characteristics of the women interviewed provides a reference for interpreting the findings presented in this report. A calculation of the average age of the group found it to be 33 years. Table 1 shows the age structure of the sample. It can be seen that most (22.3%) of the women in the sample were between the ages of 25-29. The second largest group comprised women in the range of 30-34 years. Except for the youngest group, the rest of the women were nearly equally distributed.

Table 1. Age Structure of the Sample

Age	Frequency	Percentage
15 - 19	5	1.6
20 - 24	46	15.1
25 - 29	68	22.3
30 - 34	57	18.7
35 - 39	47	15.4
40 - 44	48	15.7
45 - 49	34	11.1
Total	305	100.0

Table 2. Distribution of the Sample by Wife's Education

Level of Education	Frequency	Percentage
No Education	11	3.6
Primary	225	73.8
Secondary & Above	69	22.6
Total	305	100.0

In terms of education, Table 2 demonstrates that most (73.8%) of the women in the sample finished no more than primary education. Women whose educational background was secondary school or higher represented only 22.6 percent. A similar pattern can be seen in Table 3 when women in the sample were characterized by their husband's education.

Table 3. Distribution of the Sample by Husband's Education

Level of Education	Frequency	Percentage
Don't Know	3	0.9
No Education	10	3.3
Primary	186	61.0
Secondary & Above	106	34.8
Total	305	100.0

The proportion of women by marital status are shown in Table 4. It can be seen that 93.1 percent of the women were currently married. Among this group, approximately 9.9 percent were not living with their spouse. Their separate residences were attributed mainly to occupational requirement and were temporary in nature. The women who were permanently separated from their husbands comprised only 1 percent. Divorcees and widows also had small shares in the sample (2.3% and 3.6% respectively).

Described in terms of employment status, approximately 90 percent of the women were working outside the home. This level of labor force participation was quite high and nearly equals the 99 percent level of employment of their husbands.

Table 4. Distribution of the Sample by Marital Status

Marital Status	Frequency	Percentage
Currently married	256	83.9
Currently married (but not living with husband)	28	9.2
Separation	3	1.0
Divorce	7	2.3
Widow	11	3.6
Total	305	100.0

Table 5. Distribution of the Sample by Occupation

Occupation	Frequency	Percentage
Agriculture	133	43.6
Government Officials	49	16.1
Trade	57	18.7
Skilled and Semi-skilled Workers	15	4.9
Unskilled Workers	17	5.6
Housewife	34	11.1
Total	305	100.0

Table 6. Distribution of the Sample by Husband's Occupation

Occuptation	Frequency	Percentage
Agriculture	120	39.3
Government Officials	70	23.0
Trade	29	9.5
Skilled & Semi-skilled Workers	23	7.6
Unskilled Workers	46	15.1
Unemployed	2	0.7
Husband Deceased	15	4.9
Total	305	100.0

Table 7. Distribution of the Sample by Monthly Income

Income	Frequency	Percentage
Below 1,000	80	26.2
1,000 - 1,999	81	26.6
2,000 - 2,999	41	13.4
3,000 - 3,999	32	10.5
4,000 - 4,999	14	4.6
5,000 +	56	18.4
Don't Know	1	0.3
Total	305	100.0

Table 5 indicates that almost half (43.6%) of the women participated in agricultural related work. Less than 20 percent worked either in trade or for the government. Even less were employed in the categories of skilled and semi-skilled workers or unskilled workers.

As reflected by the predominance of agricultural activities in Thailand, Table 6 shows that 39.3 percent of the women gave us the information that their husbands worked in agriculture, and 23.0 percent in a government office. Trade represented only 9.5 percent, as compared to 15.1 percent of unskilled workers and 7.6 percent of skilled and semi-skilled types of work.

The final characteristics to be looked at is income. Table 7 presents the distribution of the sample in terms of monthly family income. Slightly more than half (52.8%) of the sample earned less than 2,000 Baht per month. A little over three-fourths received less than 4,000 Baht. In general, it can be seen that the levels of income in the sample are fairly well distributed.

CHAPTER III

FERTILITY AND CONTRACEPTIVE BEHAVIORS

Age-Specific Marital Fertility Rates

Estimates of age-specific marital fertility rates can be derived from the birth data collected from respondents in the interviews. These data were examined to determine the number of births, reported by currently married women in the year prior to the field work.

Table 8. Age Specific Marital Fertility Rates

Age	Fertility Rates
15 - 19	600
20 - 24	390
25 - 29	220
30 - 34	70
35 - 39	40
40 - 44	20
45 - 49	00
Total	140

Table 8 describes the level of fertility in our sample. It can be seen that the highest fertility was in the young cohorts. Women aged 15-19 had the highest fertility level (600 births per 1,000 currently married). After the age of 19 the women began to show a pattern of decline in fertility with advanced age. By the time the women were between the ages of 20-24 their fertility had

declined by almost one-half, and by almost two-thirds between 25-29 years. It can be seen that women in our sample completed their fertility by the time they were 45 years old; they did not bear any more children.

Percent Pregnant and Number of Children Ever Born

In addition to age-specific marital fertility rates, fertility levels in our sample can be described by the percentage of women being pregnant at the time of interviewing. A result of our analysis found that approximately 19 percent of the women were pregnant. This level of pregnancy is higher than the average of only 10 percent found in one of the most recent national surveys of contraceptive and fertility behavior (see Suvanajata and Kamnuansilps, 1979). This difference is attributed to methodological differences, and does not reflect any actual difference or an increase in the proportion of pregnant women.

Another measure of fertility is an average number of children ever born. It was found that women in the sample had an average of 3.2 children. Further examination of data on the basis of provinces found that women in Nongkai province had more children (4.0) than those in Lumpoon province (2.3). The figures derived from this study confirm the data from the birth registration of the Department of Local Administration which also showed that Nongkai province had a higher birth rate than Lumpoon province.

Fertility Differentials

The data on children ever born were used to calculate the fertility differentials in the three most important and interrelated variables, namely education, occupation and income.

Table 9. Number of Children Ever Born by Respondent's Education by Age

Education	Age							All Ages
	15-19	20-24	25-29	30-34	35-39	40-44	45-49	
No Education	*	*	*	*	*	*	*	4.8
Primary	*	1.3	2.0	3.1	3.8	4.6	7.0	3.4
Secondary	*	0.8	1.2	2.5	3.4	3.2	*	2.0
College	*	*	*	*	*	*	*	2.1
Total	1.0	1.2	1.9	3.1	3.7	4.4	6.3	3.2

*Number of cases are too few to warrant a calculation of reliable mean.

Table 10. Number of Children Ever Born by Respondent's Education by Marriage Duration

Education	Marriage Duration					All Ages
	0-3	4-6	7-9	10-12	13+	
No Education	*	*	*	*	6.0	4.8
Primary	1.1	1.6	2.0	2.8	5.0	3.4
Secondary	0.8	1.2	2.2	2.6	3.7	2.0
College	1.0	*	*	*	2.8	2.1
Total	0.9	1.6	2.7	2.9	4.9	3.2

*Number of cases are too few to warrant a calculation of reliable mean.

Wife's Education

The relationship between the educational level attained by ever-married women and their cumulative fertility controlling for age and for marriage duration is presented respectively in Tables 9 and 10. For the total sample there seems to be an inverse relationship between level of education and number of children ever born. Women with no formal education bore an average of 4.8 children, while those who finished primary school had 3.4 children, about 1.4 children more than those who finished secondary school. Those who finished some college education had (2.1) a very slightly higher number of children than those who finished secondary education (2.0). This difference between the two groups was not significant and was attributed more to sampling fluctuation due to the small number of cases who had some college education rather than true actual differences in the two categories of education.

When the effects of age were controlled, the differences in the number of children ever born followed the pattern of an inverse relationship. Similar conclusions can be made when the effects of marriage duration were removed. The only exception is in the group of women who were married for less than four years. It should be noted that the number of college educated women in the sample is too small to draw any significant conclusions.

Husband's Education

Fertility is also related to the education of the husband in Tables 11 and 12 which show the mean number of children ever born to wives of household heads according to the number of years of schooling attained by their husbands. Table 11 shows that, where the number of cases were large enough to calculate the means, there is an inverse relationship between husband's education and fertility in all age groups. It should be noted that the number of women aged 15-19 and women whose husbands had no formal education represented only a small proportion of respondents. Therefore the means are not presented for detailed classification of educational levels among women aged 15-19 years and for age categories of women whose husbands had no formal education.

Table 11. Number of Children Ever Born by Husband's Education by Age

Education	Age							All Ages
	15-19	20-24	25-29	30-34	35-39	40-44	45-49	
No Education	*	*	*	*	*	*	*	5.1
Primary	*	1.4	2.0	3.5	4.0	4.8	6.4	3.3
Secondary	*	0.9	1.5	2.6	3.6	4.4	6.7	3.0
College	*	*	1.1	2.1	2.3	2.0	*	1.7
Total	1.0	1.2	1.9	3.1	3.7	4.4	6.3	3.2

*Number of cases are too few to warrant a calculation of reliable mean.

Table 12. Number of Children Ever Born by Husband's Education by Marriage Duration

Education	Marriage Duration					All Ages
	0-3	4-6	7-9	10-12	13+	
No Education	*	*	*	*	*	5.1
Primary	1.2	1.6	2.0	2.9	4.9	3.3
Secondary	0.8	1.6	2.2	2.7	4.9	3.0
College	0.7	1.6	*	2.7	2.4	1.7
Total	0.9	1.6	2.7	2.9	4.9	3.2

*Number of cases are too few to warrant a calculation of reliable mean.

A similar inverse relationship between husband's education and fertility can be identified in Table 12. It can be seen that, when the effect of marriage duration was controlled, fertility in most groups declined with rising educational attainment. The only exception is in the marriage cohort of 4 to 6 years, where the same level of fertility persisted.

Wife's Occupation

Occupation has been a prominent variable in both theoretical considerations and empirical investigations of fertility behavior. It is interesting therefore to examine the fertility differentials in occupation.

Table 13 presents the mean number of children ever born by occupation and age. In general, it can be seen that women who worked in agricultural related occupations had the highest fertility (3.7). Women who were merchants (3.4) and those who were employed as unskilled labor (3.5) seem also to have high fertility. Among the wives who participated in the labor force, those who worked for the government had the lowest level of fertility (2.2). Table 14 shows the mean number of children ever born by occupation and duration of marriage. An interpretation of the results from this table is similar to that derived from Table 13. In all marriage durations, women from the farming families had more children than women from other occupations.

Husband's Occupation

Table 15 and Table 16 present the mean number of children ever born to wives of household heads according to their husband's occupation after the effects of the variations on age and marriage duration were controlled. It can be seen that, where data were available for comparison, while there are fertility differences for all age groups the differences are not pronounced among the young wives. The differences are most pronounced when we consider fertility in the oldest age cohort who has completed fertility.

Table 13. Number of Children Ever Born by Respondent's Occupation by Age

Occupation	Age							All Ages
	15-19	20-24	25-29	30-34	35-39	40-44	45-49	
Government	*	0.9	1.5	2.2	3.2	3.8	*	2.2
Agriculture	*	1.5	2.3	3.6	4.1	5.0	8.0	3.7
Trade	*	*	1.2	2.7	3.5	4.8	4.8	3.4
Skilled & Semi-skilled	*	*	*	*	*	*	*	2.7
Unskilled	*	*	*	*	*	*	6.6	3.5
Housewife	*	1.1	1.8	3.1	*	*	*	2.2
Total	1.0	1.2	1.9	3.1	3.7	4.4	6.3	3.2

*Number of cases are too few to warrant a calculation of reliable mean.

Table 14. Number of Children Ever Born by Respondent's Occupation by Marriage Duration

Occupation	Marriage Duration					All Ages
	0-3	4-6	7-9	10-12	13+	
Government	0.8	1.7	2.0	*	3.8	2.2
Agriculture	1.3	1.5	2.2	3.2	5.3	3.7
Trade	0.6	1.8	2.0	3.1	4.6	3.4
Skilled & Semi-skilled	*	*	*	*	4.1	2.7
Unskilled	*	*	*	*	5.0	3.5
Housewife	1.0	1.6	2.0	2.2	5.6	2.2
Total	0.9	1.6	2.7	2.9	4.9	3.2

*Number of cases are too few to warrant a calculation of reliable mean.

Table 15. Number of Children Ever Born by Husband's Occupation by Age

Occupation	Age							All Ages
	15-19	20-24	25-29	30-34	35-39	40-44	45-49	
Government	*	0.9	1.6	2.9	3.0	4.1	5.5	2.6
Agriculture	*	1.5	2.3	3.0	4.2	5.6	7.5	3.7
Trade	*	*	1.3	2.9	3.5	*	*	2.6
Skilled & Semi-skilled	*	*	1.8	2.4	*	*	*	2.7
Unskilled	*	1.0	1.7	4.3	3.8	4.1	7.0	3.3
Unemployed or Deceased	*	*	*	*	*	3.6	*	3.4
Total	1.0	1.2	1.9	3.1	3.7	4.4	6.3	3.2

*Number of cases are too few to warrant a calculation of reliable mean.

Table 16. Number of Children Ever Born by Husband's Occupation by Marriage Duration

Occupation	Marriage Duration					All Ages
	0-3	4-6	7-9	10-12	13+	
Government	0.8	1.8	1.9	3.0	4.7	2.6
Agriculture	1.3	1.4	2.2	3.3	5.3	3.7
Trade	*	*	*	2.9	3.2	2.6
Skilled & Semi-skilled	*	1.4	1.8	*	*	2.7
Unskilled	0.8	1.6	*	2.3	5.3	3.3
Unemployed or Deceased	*	*	*	*	4.6	3.4
Total	0.9	1.6	2.7	2.9	4.9	3.2

*Number of cases are too few to warrant a calculation of reliable mean.

Similarly, fertility differences by occupation are most striking only among the group of those who were married for 13 years or more. Comparison of the most and least fertile groups found a difference of approximately 40 percent between those wives from farming families and those whose husbands were merchants or sales personnel.

Income

Fertility differentials in income were analyzed and the results are presented in Tables 17 and 18. Without controlling for the effects of age and marriage duration, there is an indication of an inverse relationship between monthly family income and fertility. Women whose family income was below 1,000 Baht per month showed the highest cumulative fertility (3.6). With the increases of family income the levels of cumulative fertility declined to the lowest of 2.7 among those who earned more than 3,000 Baht a month.

However, when the effects of age were considered, the relationship between monthly income and fertility is irregular in two age groups--25 to 29 and 40-44. The results here indicate an interaction effect between income and age which may need further examination.

Of equal interest is the relationship between income and fertility, controlling for marriage duration. It was found that the relationship was irregular when marriage duration was controlled. Except for those who were married for more than 13 years, it is possible that women whose family income was between 2,000 and 2,999 Baht per month wanted more children than other income groups. Particular caution, however, is required when interpreting differentials in cumulative fertility according to current income (characteristics) of the family. Cumulative fertility is a product of a number of years in the past, whereas family income may be current and not the level the family earned before. Therefore it is still in doubt that raising income to a specific level also raises the desire for more children.

Table 17. Number of Children Ever Born by Income by Age

Income	Age							All Ages
	15-19	20-24	25-29	30-34	35-39	40-44	45-49	
Below 1,000	*	1.6	1.7	2.9	4.9	4.1	7.2	3.6
1,000-1,999	*	1.0	1.8	3.8	3.8	5.1	7.4	3.3
2,000-2,999	*	1.2	2.5	2.8	3.5	3.0	6.4	3.2
3,000+	*	1.1	1.8	2.3	3.0	4.5	5.1	2.7
Total	1.0	1.2	1.9	3.1	3.7	4.4	6.3	3.2

*Number of cases are too few to warrant a calculation of reliable mean.

Table 18. Number of Children Ever Born by Income by Marriage Duration

Income	Marriage Duration					All Ages
	0-3	4-6	7-9	10-12	13+	
Below 1,000	1.3	1.7	2.2	2.5	5.3	3.6
1,000-1,999	0.9	1.4	1.8	2.8	5.3	3.3
2,000-2,999	*	1.5	2.4	3.8	4.0	3.2
3,000+	0.8	1.6	2.1	2.8	4.5	2.7
Total	0.9	1.6	2.7	2.9	4.9	3.2

*Number of cases are too few to warrant a calculation of reliable mean.

Family Size Planning

Women in the sample were asked if they had ever thought before they were married of how many children they wanted. Approximately 68 percent of them replied affirmatively. For those who gave an affirmative answer, another question designed to solicit the planned number was asked. Their answers were analyzed and it was found that about 42 percent of the group wanted no more than 2 children, and about 51 percent wanted between 3-4 children. The results indicate that more than half of the Thai women still had a large ideal family size. Their ideal family size was above the replacement level of 2.2. Therefore, it is important, if Thailand wants to reduce the population growth to the replacement level, to campaign for the smaller ideal family size among Thai women.

Interestingly, however, it was found that the fertility of those who had thought about some kinds of family size planning was lower than those who had no notion of choosing an ideal size. The average number of children ever born for the former was 3.0, as compared to 3.6 for the latter. This indicates that the former group must have really practiced some contraception.

Contraceptive Use

Probably the most important intermediate variable described by Davis and Blake (1956) in terms of accounting for the differences in the fertility of economically less developed and economically advanced countries is the use or non-use of contraception. With the significance of contraceptive use, we have collected data both on ever use and current use of contraception. The results for ever use status and methods used are presented in Table 19. About 76.4 percent of the ever-married women aged 15-49 interviewed in the study had practised contraception.

Table 19 shows that the pill was the most widely used contraveptive method. Almost 48 percent of ever married women reported that they had used the pill. Almost 19 percent of ever married women indicated that they had been sterilized, while only less than one percent of them said their husbands had a vasectomy.

Interestingly enough, about 6.2 percent of the women in our study indicated that they had had some induced abortions before. This is an indication that when they had some method failures and unplanned pregnancies they resorted to abortion, which can be interpreted that most births which occurred in marriage were not just random. Most Thai women had thought in advance about family building and family size before they practiced any contraception. Therefore their fertility decision must be of particular interest to demographers.

Table 19. Percent Ever Used Contraception and Method Used

Use Stauts		Method						
		Pill	Condom	IUD	Female Sterilization	Male Sterilization	Abortion	Other
Ever	76.4	47.9	1.3	1.3	18.7	0.3	6.2	0.6
Never	23.6	-	-	-	-	-	-	-

With regard to the level of current use of contraception, we found that there was almost no difference in the level of contraceptive use. A decline of approximately 6 percent in the level of contraceptive use was noted. This difference was clearly attributed to the elimination of abortion as a legitimate method for current use. Comparison of data of ever use status with that of current use indicates that the rates of drop out among Thai women were very low.

CHAPTER IV

FERTILITY DECISION

Intention to Have Another Child

As a rough measure to see whether Thai women had made any calculated fertility decision, they were asked if they wanted another child. This question was asked because we believe that humans always make a choice when they have several alternatives. Having one child, or an additional child is no exception. Couples can almost always plan and choose the time to have another child well in advance before the birth actually comes.

The data from the responses to the question indicate that only 1 out of 305 respondents absolutely could not make any fertility decision. Among the women who could express a decision for having another child, 62 percent did not want to have any more children; only 38 percent did. For those who wanted more children, they were asked how soon they wanted to have another child. Their responses show that about 22 percent wanted to have their next child soon: 11 percent before the next year, 19 percent within the next year and 25 percent within the next 2 or 3 years. We also noted that 12 percent of the respondents in this group could not have any more children due to health reasons. Interestingly, by asking the question about the time the respondents actually plan to have another child, we were able to differentiate those who could not make plan and make a decision on fertility from the group who earlier expressed the desire to have another child. Approximately 9 percent of the respondents in the group or about 3 percent of the total sample did not really know when they wanted another child. This group of persons was only partially able to make their fertility decisions. Therefore, it is estimated that about 97 percent of Thai women were able absolutely to make their fertility decision. To them, having a child was never a random and unplanned event.

Another question was asked to get at the desired number of additional children. It was found that 74 percent wanted to have one more, 18 percent 2 more, 6 percent 3 more and about 2 percent 4 more. The answers to this question indicated that most of the women in this group wanted to have only one more child.

On the average this group of women wanted 1.4 more children. But when a mean of desired additional children was calculated for the whole sample the average was 0.5. It is expected, therefore, that by the time this group of women complete their fertility they would have an average total of 3.7 children per family.

The results from our analysis have clearly indicated that Thai women not only could decide whether they actually wanted any more children, but they could also choose the time and the number they wanted.

Sources of Influence in Fertility Decision

The decision to have children may be influenced by the opinion of several people. A woman's ideal number of children may also be shaped by the opinion of people whom she perceived as significant for her. In an attempt to identify the source of influence in the decisions to have a child (or children) women in the sample were asked to identify the persons whom they perceived as having influence in their decisions. Table 20 shows that relatives were one of the most important groups of persons that women most frequently consulted and talked with. Through close interactions with relatives, they were able to discuss the intimate and more personal issues, such as how many children one should have. However, since the classification of relatives included close relationships from siblings to more distant relationships such as aunt or uncle, we found the reported ideal number of children for the category very heterogeneous and more speculative than actual. Most respondents in the group could only give an answer on the perceived ideal number in terms of "many" or "few," not being specific in number. Interestingly, we found that the proportions who gave the answer either "many" or "few" were not significantly statistically different. This suggests that while

relatives were reported as important on the matter of making the decision for having or not having children, their influences in the ideal number of children may be rather random, and the positive and negative effects on fertility may cancel each other.

Of almost equal importance in the mind of the women were friends and neighbors. About 34 percent of the women interviewed reported that they used to talk with close friends and neighbors on the matter of how many children one should have. The consensus of opinion of friends as reported by the respondents was that one should not have too many children to the point that it would make it difficult to bring up quality children. The normative number for the close friends and neighbors was a family of 3.0 children--a figure which is interestingly close to the actual average number of children ever born of 3.2 for the respondents. Therefore it is apparent that a large proportion of women in the sample took the opinion of their friends and neighbors seriously in deciding on the number of children they should have.

While the husband's opinion is expected to have a significant impact on the decisions of the wife, the proportion of respondents who placed their husbands as the most influential person on her decision to have children represented only 24.3 percent. It should be noted here that the figure presented was derived from the first answer to the question. There were several people who listed more than one persons whom they perceived as having some influence on their decisions. A considerable proportion of respondents mentioned husband in their second answer. The interaction between husband and wife therefore is important and will be explored and discussed again in the next section.

Table 20. Person Having Influence in Fertility Decision

Person	Frequency	Percentage
Relative	114	37.4
Friend & neighbor	104	34.1
Husband	74	24.3
Parents	9	2.9
None (self)	4	1.3
Total	305	100.0

It is interesting also to find that only 2.9 percent of the respondents reported parents as having some influence on their decisions. This figure seems to be lower than what we expected. However, when we analyzed the answers from the depth interviews of respondents on the interaction between married couples and parents we had interesting findings. We found a larger proportion of wives who admitted that they had talked with their parents on the size of family they should be building. In fact, they were even encouraged to observe the ideal number conveyed to them.

Among approximately 68 percent of the wives who ever talked with their parents on the topic of ideal number of children, the average parents' ideal number of children as reported by the respondents, after excluding those who did not know the exact number, was 3.3. This figure is also close to the actual fertility of 3.2 children of the wives.

With the intention of comparing the ideal number of children of the wives' parents with those of the husbands' parents, we also asked the respondents if they knew how many children their husbands' parents wanted them to have. About 30 percent of the respondents were able to give the exact number; and 11 percent were only able to judge the parents' desired number in terms of few or many. A calculation of mean ideal number of children, after excluding those who could not give a specific number, found a slightly higher level at 3.4. Since the difference was small it seems uncertain whether the husbands' parents really wanted more grandchildren than the wives' parents. Further research in this area is needed before we can have any more definitive evidence of parents' ideal number and its influence on the married couple's decisions.

After noting all the influential persons, there remained only 1.3 percent of the wives who decided on their own. For this small group of persons, the decision to have children means that each individual must be responsible and bear any costs entailed in the raising. The individual, therefore, should not let someone else decide the matter for them.

After giving all the sources of influence, an observation can be made that when grouping relatives, husbands and parents together, we can see that the dominant influencing entity lies chiefly in the family institution. While family structure does not explain fertility differentials in the types of family (Kamnuansilpa and Ragthaidee, 1977), the family institution in itself is still significant in serving as a structural source of influence in the decisions regarding birth and size of children. This suggests that the patterns of interaction among family members are more important to look at than merely the coresidency. If coresidency has any effect on fertility decisions, it is only mediated by a closer interaction among family members.

Husband and Wife Communication

The study of fertility decision cannot be conducted without looking at the extent of husband and wife communication on the topic of birth planning and ideal size of family. Rainwater and Weinstein (1960) found from a study of the marital relations of 95 lower class white couples in Chicago and Cincinnati that couples who frequently communicated to each other on the subject of ideal family size and other family affairs were among the higher proportion who practiced contraception. In addition, they were more effective in the way they used contraception.

In our study we also investigated the extent of communication between husband and wife on contraceptive behaviors. Respondents in our sample were asked to indicate the subject they most frequently talked about with their husbands. The responses to this question revealed that the subject the couples most frequently talked about was economic in nature. About 70 percent of them discussed ways to make a living, which included occupational opportunities, incomes and so on. Still, approximately another 16 percent of the couples conversed quite often on what to do to raise their own standards of living and ways to become affluent. These two types of answers represented almost 80 percent of the total responses. Therefore family economic well-being was the topic of utmost concern among most Thai married couples.

Almost discussed by one-tenth of the couples was the future and educational opportunity of children. But in fact the discussions of educational opportunity could not be made without any economic consideration. The rest of the respondents, about 10 percent, reported various other types of discussion. What is worth mentioning is that only about 1 percent indicated family planning as the topic most frequently talked about in the families.

Since one of our prime concerns in exploring the extent of communication among the married couples was the subject of birth planning, interviewers were instructed to investigate communication between husband and wife on the use of contraception. After being questioned, 78 percent of respondents reported that they ever discussed more than once with their own husband the topic of family planning (see Table 21).

Table 21. Proportion of Wives Who Had Ever Communicated With Husband on Family Size and Number of Children Desired

Proportion Ever Communicated	Number Desired							All Number
	1	2	3	4	5	6 or more	Any	
(%) 78.0	3.4	34.8	26.9	19.3	6.3	7.6	1.7	100.0
(n) 238	8	83	64	46	15	18	4	238

Interestingly, we found that the communication among these couples went further, even to the point where they included ideal family size as the topic of discussion. We can see from Table 21 that 61.7 percent of these couples wanted between 2 or 3 children. The mean ideal number of children for them was 3.2, compared with their actual fertility of 3.0 children. The small difference here indicates that most of the married couples were able to attain their ideal number of children; also there were some women who would have additional children before they would complete their families. All this information put together implies that women in Thailand were able to control their fertility, thus having children by choice and not by chance.

Women who ever communicated with their husbands on the subject of birth planning and ideal size of family were also asked if they knew of their husbands' reason for choosing a specific family size. The responses presented in Table 22 show that more than half (51.3%) of the wives gave economic consideration as their main reason. Their ideal size of children was judged and formulated on the basis of their income levels and costs of raising children. Therefore, most couples agreed with the normative value that one should not have more children than one can really afford in order to bring up quality children.

About 10 percent of the husbands considered the ideal number of children on the basis of security in old age. This group of husbands wanted to have enough children around so that there would be someone to take care of them when they become too old to take care of themselves. This group of respondents tended to desire more children than the former group.

There is still the third category of responses. Almost 30 percent of the wives considered the ideal number of children from the perspective of appropriate size--neither too large nor too small; and there were no other reasons.

Table 22. Husband's Reason for Wanting a Specified Number of Children

Reason	Frequency	Percentage
Economic	122	51.3
Security in old age	24	10.1
Meet ideal number	70	29.4
Health	3	1.3
Don't know	19	7.9
Total	238	100.0

Health reasons represented only about 1 percent of the responses. Wives in this group were no longer able to have any more children. There were about 8 percent of the wives who did not know their husbands' reason for wanting a specified number of children. It is suspected that there might be some degee of communication barrier among them that somehow made it very difficult for wives to know their husbands' reasons, or simply that their communication might not have been extensive enough to allow them to consider the reasons for choosing a specified number.

The investigation of husband and wife communication was also aimed at measuring the extent to which the couples shared the same ideal number of children. Interestingly, approximately 14 percent of the wives who reported having communication with their husbands had a different ideal number of children from their husbands, with about 3 percent wanting more and 11 percent wanting less children.

When asked for the reasons, we found that the wives who had the large ideal family size wanted more children because of psychological reasons. A large family for them would provide psychological gratification, such as companionship and love. Those who preferred a small family judged it on the basis of the financial costs of rearing quality children and on the precariousness to one's health from having too many children.

Advantages and Disadvantages of Having Many Children

During the interview respondents were asked an open ended question to elicit the responses on the advantages and disadvantages of having many children, defined as three or more. Table 23 shows that the most frequently mentioned advantage of having many children is help in economic activities. Women whose responses were classified into this category perceived that children provided economic benefits to parents, among them were the sharing of financial responsibility when children are employed, the assistance in the family business or farm, and general economic help. The second most frequently mentioned advantage is security

and care in old age. Almost 25 percent of the wives perceived that children were their source of economic security and care in old age. Still a much smaller number of wives mentioned the advantages of children in terms of household help and unspecified help. These three categories of responses represented about 72 percent of the married women. Therefore we can say that about 72 percent of women perceived the advantages of having a large number of children in terms of economic utility.

Psychological values of children were mentioned less frequently, only 8.8 percent. Companionship, happiness for the family, and love and affection associated with children were the prominant responses on the psychological advantages (7.2%). Only 1.6 percent saw the advantages in terms of an increasing opportunity for the extension of self. To the women whose responses belonged to this category, children would be a source of hope for achievement and pride. Most notable was the verbal report that they hoped that whatever had not been accomplished in their life course would be pursued again in the life course of their children. In connection with this psychological value of children was the opinion that one of the happiest moments in life is the time when one can see the success of their children. There were a few who set the goal for several of the most prestigious occupations (for example, doctor, lawyer and engineer) for their children to follow. Therefore, we can see that while economic advantages were the most frequent response, psychological advantages were also salient.

After the respondents had mentioned all the advantages they could think of, they were asked to state what they considered to be the disadvantages of having a large number of children. Table 24 indicates that the most salient disadvantage was the financial costs of children. While about 45 percent of the respondents mentioned general financial costs, almost the same proportion or about 43 percent mentioned more specifically the costs of educating children. These two types of responses were in fact similar in nature because both centered on the perceived economic costs of

Table 23. Advantages of Having a Large Number of Children

Advantage	Frequency	Percentage
Help in economic activities	143	46.3
Security and care in old age	75	24.6
Help in housework	2	0.7
Companionship, avoidance of loneliness	22	7.2
Extension of self	5	1.6
None (No advantage)	52	17.0
Don't know, no answer	6	2.0
Total	305	100.0

Table 24. Disadvantage of Having a Large Number of Children

Disadvantages	Frequency	Percentage
General financial costs	136	44.6
Education Costs	132	43.2
Rearing Problems	6	2.0
Obstacle for gainful employment	10	3.3
Don't know, no answer	21	6.9
Total	305	100.0

children. The difference is that educational costs were more likely to be mentioned by those whose income and educational attainment were above the group average. It should be noted here that the findings that financial costs were the most salient disadvantages confirms the results from the earlier study of The Value of Children in Thailand by Buripakdi (1977).

Other disadvantages noted included rearing problems in general. According to the respondents, having many children requires a lot of time, effort and emotion for the rearing and disciplining of children. Also mentioned by approximately 3 percent of the women was the opportunity cost of having a large number of children. Children were perceived to create an obstacle for the gainful employment of the mother. Taking care of children is a full time job in itself, thus making it difficult for both husband and wife to take extradomiciliary work. Although servants or housemaids can be hired to help take care of children, such services have become expensive, and parents still cannot help worrying about childcare while at work.

We have seen that the economic benefits and costs of children are salient to married women and presumably to their husbands, as well. It is expected therefore that couples will make conscious decisions about bearing children; those decisions should be based on their perceptions of the benefits to be derived from children weighted against the costs they expect children to entail. However, it is not suggested that couples make childbearing decisions entirely or perhaps even mainly, on the basis of economic factors. Childbearing decisions are indeed complex and purely economic models of fertility cannot hope to capture all the elements involved in these decisions. More accurately, it should be concluded that in Thailand economic factors are an important, but not the only, component in family size decisions. Our interpretation of the effects of economic factors in the fertility decisions here is consistent with that suggested in the study of Economic Factors in Family Size Decisions in Thailand, by Arnold and Pejaranonda (1977).

Although we have documented the significance of economic factors in fertility decisions, it remains to be seen whether they are powerful enough to influence decisions about family planning and contraceptive use. Do women decide to practice contraception because of the costs of raising children and other economic constraints? Aside from the economic consideration, are there any other factors which influence the decisions to adopt contraception? These questions are not easy to answer on the basis of the results of a single study, but partial conclusions can be drawn from an examination of the data in Tables 25 and 26 which give respectively the first and second reasons that led to the decision to adopt contraception.

Comparing the results from the two tables allows us to detect whether there was more than one factor involved in the decision of the women. Approximately 75 percent of the respondents stated that their decision to limit the number of births was based mainly on one factor, which means that another 25 percent considered more than one factor.

Among those who gave their first reason for the use of contraception, about 62 percent expressed the constraints of economic factors, as compared with almost 30 percent who considered social factors. Suggested as being outside the influences of economic and social factors, were about 7 percent of the married women who had to use contraception because their health conditions were poor, and who were advised by the physicians not to have any more children. Almost all of them wanted more children, but were not able to fulfil this desire.

While more than half of the women who used contraception stated that their decision was based on the economic situation of their own family, nearly 87 percent of this group focused mainly on the costs of raising children; about 12 percent desired to devote their time more extensively to gainful employment and saw the incidence of having another child as an obstacle for it, or in some cases an obstacle for job advancement; others (approximately 1 percent) wanted to limit their family size because of

Table 25. First Reason for Practicing Contraception

Reason	Frequency	Percentage
Economic	145	62.2
Expenses (costs)	126	54.0
Obstacle for Occupational Advancement	17	7.3
Insecurity	2	0.9
Social	69	29.6
Education	19	8.2
Group norms	48	20.6
Other	2	0.8
Health	16	6.9
Don't know	3	1.3
Total	233	100.0

Table 26. Second Reason for Practicing Contraception

Reason	Frequency	Percentage
Economic	15	36.6
Social	20	48.8
Health	6	14.6
Total	41	100.0

the couples' bleak economic outlook. The results here suggested that the costs of children judged by the majority of women outweighted the utility factor. Perhaps it is suggested also that most married couples in Thailand considered that children would add more costs than income, either in cash or kind, to the families, thus making it necessary to limit the number of births.

Interestingly enough, approximately three-tenths of the couples limited the number of their children because of social factors. Approximately 70 percent of this group used contraception because they were influenced by the norms of the social groups with whom they interact. These social groups include friends and neighbors, relatives and to a smaller extent, parents as well. While in fact the influence of these social groups may have already been counted and expressed in terms of economic rationality among the majority of the women who used contraception, a distinction here must be made that this is the group of women who wanted to have some specified number of children that were in accord with the ideal number of the groups. As interesting implication here is that we are seeing a study which points out that behavior in itself can affect attitudes. More specifically we are suggesting that the use of contraception now in Thailand has been prevalent enough to the point where one can think of the use of it, and thus having a small number of children, as a normative behavior. Those conforming with this group norm, by having a large number of children, would be deviant or simply just create a cognitive dissonance situation whereby their behavior would not be consistent with the individual's private perception of the society.

Education, though classified as one component of the social factor, cannot be clearly separated from the economic factor. About 8 percent of the women wanted to limit their number of births because they wanted to send their already born children to one of the best schools to enable them to have the best education.

The desire for strong educational achievement by the children is reinforced through societal norms that encourage one not to have more children than one can afford to bring up as quality children. In addition, Thai society has a strong positive social value regarding education. A person who completes a high level of education is normally placed well above the average in the social strata. This is even more true in the rural areas than in urban communities. Therefore, there is a strong social pressure for parents to provide their children with the best education they can. There is, of course, the cost of educating the children involved; and this is, at least, one part in the decision-making process of women where economic and social factors intertwine.

Further evidence of the multifactors involved in the decisions to regulate birth is interpreted in Table 26. Approximately 18 percent of the women who used contraception reported that they had more than one reasons to limit their fertility. Among them, 36.6 percent mentioned economic factors, 48.8 percent mentioned social factors and 14.6 mentioned health effects from being pregnant too frequently. It is interesting that a higher percentage of women mentioned social factors than those who mentioned economic factors in the answer for the second reason. Thus it suggests that while economic consideration may come at first thought, the social aspects of having children are more or less equally important.

Women who did not use contraception were also asked for the reasons. Among the 72 cases of the women who were in this group, 18 percent reported that they were afraid that the use of contraception would have some side effects or negative effects on their health, 13.9 percent wanted to use it but were unable to get access to it, 23.6 percent had no need for it because of subfecundity or temporary separation from the spouse, and 37.5 percent of them still wanted more children. Women in the latter group were probed to investigate whether their desire for more progenies was based on the perceived economic **utility** of children. It was found that most of them wanted **more** children because they were quite young wives who were newly married and had not yet been able

Table 27. Reason for Not Practicing Contraception

Reason	Frequency	Percentage
Side effects	13	18.0
Not accessible	10	13.9
Want more children	27	37.5
Sub fecund	17	23.6
Separation from spouse	3	4.2
Don't know (no responses)	2	2.8
Total	72	100.0

to attain their ideal number of children. Only a few persons already had more than three children. When asked the reason for wanting more children, their answers varied, but the most interesting answer was that children were seen as a source of security in old age and at other times of need. This kind of answer was referred to by some demographers as the "pension motive" for having children. Neher (1971), for example, believed that the pension motive was a major motive for having children in primitive societies. With the lack of pensions, social security, unemployment compensation, and other insurance schemes, children served as the only reliable source of security for their parents, particularly in old age. The strength of this motive, however, was still debatable. Hohm (1975) showed that social security programs had a negative effect on subsequent levels of fertility in a large number of countries. However, both Robinson (1972) and Ohlin (1969) believed that, empirically, children were not a good investment for old age. While we believe that, judging in terms of monetary return, children may be a poor investment, we are also of the opinion that monetary support is, of course, not

the only thing parents need in old age. Physical and emotional supports may be just as important and they are often extricably intertwined with purely financial considerations. Therefore the perception of children as a source of security in old age and at other times of need is of particular interest to us.

We have found, therefore, that married couples do not perceive of economic utility as a linear function. Within a range of certain numbers, children are believed to have economic utility; after that range, children may be perceived as a disutility. A more appropriate way to investigate the significance of the pension motive is to ask a question on the purpose or advantage of having children in general, compared with not having children at all. We found that after asking the question, 30.8 percent of the total sample mentioned one or more types of security in old age. These included economic help, companionship, comfort, and unspecified help in old age. By asking for the advantage of having children in general, we found an increase in the number of women (6.2 percent) who saw the significance of children in old age. This increase was attributed to the ways in which questions were asked, that is, having children in general as compared to simply having a large number of children. Undoubtedly, many women were able to discern the disutility or costs of having a large number of children now from future old age returns or benefits.

Other evidence of the way the answer is affected by the way the question is phrased is seen in this example. The respondents were asked if they agreed with the statement that one of the advantages of having children (in general) is that it ensures the parents that there will be someone around to take care of them in their old age. The responses to this statement found 86.6 percent of the women strongly agreed, 5.2 percent agreed, 5.6 percent agreed a little, 0.7 percent disagreed, and 2.0 percent strongly disagreed. With these results, we can see that most women did perceive of children as the source of security in old age. While this this is true, we need to be cautious and not over-generalize

that most married couples have children because they perceive children as the source of security in old age. Judging from the way the responses varied with the way questions were asked, it is more correct that couples did not base their decisions to have children entirely on the pension motive, but on several interwoven factors. Children as a security source in old age, in this case, may very well serve as a psychological benefit also, not just purely as a social and economic return. Faced with the reality that one has to make a living, economic elements are more obvious than social and psychological elements. Beneath the economic layer lies the social and psychological concerns at deeper and less conscious levels. Thus, only when the question was asked in a sufficiently stimulating manner did the answer reveal the psychological aspects of need for security, especially in old age. Children to us, as to the women in our sample, are perceived to be one of the security sources that one can hope to rely on. Therefore, it is only in the thinking process that women tend to consider the economic need first. Thus, this economic realization is the primary one, followed by the social and psychological gratifications for having children.

Mean Number of Children Desired Under Certain Conditions

We have already looked at the decisions of having children in the context of economic, social and psychological benefits. Now we will look at certain fertility depressing conditions. These conditions were introduced to the women as some criteria for evaluating or responding in terms of their hypothetical, rather than actual, fertility behaviors. Six conditions, as listed in Table 28, were introduced or mentioned to women in the sample. The responses indicated that these six conditions did have, at varying degrees, some fertility depressing effects.

Table 28. Mean Number of Children Desired Under Certain Conditions

Conditions	Mean Number
Would be the right number of children for your financial budget.	2.8
Would be the maximum number of children for you to give a good education.	2.3
Would be the maximum number of children you could have that would still leave you time for social interests.	2.5
Would be the right number for you to give enough time and attention for the children.	2.7
Would be the right number for you to give children enough companionship.	2.9
Would be the right number to strengthen the husband-wife relationship.	2.8

When asked what would be the right number of children according to their financial budget, the mean number of children desired was 2.8, about 12.5 percent lower than the actual fertility of 3.2 children. This indicates that in actuality, while financial costs of children tend to reduce fertility, the effect was lower than the potential by 12.5 percent. Thus, other factors were operating in the opposite direction, as already has been mentioned, in terms of benefits of various kinds. Nevertheless, the implication for married women is that they considered their actual fertility exceeded the ideal number by 12 percent, and this excessive fertility might have already created some tight budgeting situations in the family.

The responses to the question of what would be the maximum number of children taking into account the desire to give them a good education, found even more fertility depressing effects regarding these costs (construed as one way of bringing up quality children), as compared to budget constraints for general costs of children. The mean number of children desired by married women was only 2.3, a figure which is close to the replacement level of 2.1. The result here is consistent with the normative expectation that parents should give their children a good education. One way of achieving this is by reducing the total costs through reducing the number of children.

The first two conditions more or less had to do with the costs of children. Turning to social interests, we found that the average maximum number of children the married women considered would still leave them enough time for social activities, was 2.5. This figure is also quite low. Therefore it implies that having a large number of children creates a conflict with social activities. Women who had more children might unavoidably have to cut down some social activities, in order to avoid conflicts.

Closely related to this situation is the question of the right number of children to whom the mother can give enough time and attention. Women in our sample indicated that 2.7 would be the right number. This fourth condition has more to do with physical work and attention, than any conflict with social engagements.

Society expects the mother to give sufficient attention as well as companionship to the children. Since we assumed that human behaviors are more or less influenced by societal norms, we asked the mothers what would be the right number for them to still give their children enough companionship. The average number was 2.9. This is the highest average we received, which implies that mothers did already give almost all the companionship and affection they could to their children, and they could not see how they could give more.

The last thing we looked at was the husband and wife relationship. In Thai society, children are considered a golden chain that binds the husband and wife together, thus strengthening the conjugal relationship. At the same time there is a saying that having a child makes a couple poor for at least ten years, since it is normally expected that a poor economic situation or more specifically a financial problem in the family, undermines the family relationship. It was of particular interest to ask the wives the right number of children the couples should have in order to strengthen the husband-wife relationship. The answer to this question alone found an average of 2.8 children, which implies that, in the mind of the respondents, having as many as three or more children may not necessarily strengthen the conjugal relationship. In this case having the first or second child may have already strengthened the bond between husband and wife. A higher order of births, therefore, would not have any more effect. Also there is an implication that, through less costs entailed, a small family size may in fact sustain the relationship of the married couples better than a large one.

We have seen how women have reacted to six different situations. In the differences of the number of children there is one similarity, that is all women considered low fertility as more compatible to the hypothetical conditions suggested to them. The results in this part also implicate, if not substantiate, that the decision to have a small or large family can be influenced simultaneously by several different things. The outcome of actual fertility or the number of children one has is perhaps the result of careful deliberation. And it is suggested, also, that human beings often have to make a choice among several alternatives: children versus other amenities.

Individual Modernity and Fertility Decision

Recent development in the microlevel studies of fertility-related behaviors have pervaded the area of individual modernity. Evidences for a long-term inverse relationship between modernization and fertility were found and explained in terms of economic and social change connected with economic development (see, e.g., Notestein, 1953). This process of modernization is broad and it includes at the macroscopic level, for example, changes in the direction of lower mortality, particularly low infant and child mortality, more industrialized, more urbanized, more improved in education levels and systems, higher standards of living, higher costs of child rearing and higher degrees of social mobility and striving for achievement. Modernization also brings changes in the ways in which individuals may perceive, interpret, or react to their immediate social setting, with special reference to the consequences for family size preferences, contraceptive and fertility behaviors. For the purpose of our study we will move away from the societal-level variables of modernization, such as levels of literacy or education, average per capita income, proportion of population living in urban areas, number of radios or newspaper circulated and so on and focus on the micro level of individual modernity.

Individual modernity or modernism is broadly perceived as a pattern of psychological characteristics related to societal modernization. More specifically, it refers to a set of doctrines, or a set of attitudes, values or beliefs, ways of feelings and acting, associated with the modern state. By contrast, traditionalism is the comparable set for the traditional state. Such internalized sets of attitudes and beliefs are generally held to be the results of social change forced upon the individual. The individual in turn, through these internalized cognitive sets, acts upon social change, either to hamper or to facilitate.

Thus, these psychological modal characteristics inevitably exert a pervasive influence on the individual's decisions in related matters--in this case, fertility. Different studies on modernization focus upon different dimensions of modernity. Most studies, however, did not originally give particular attention to fertility.

The underlying rationale of individual modernity studies is that exposure to uniformities in the immediate social and physical environment will result in uniformities in certain behaviors and psychological characteristics or traits (Fawcett, 1970). With this underlying rationale a number of social psychologists have worked on the ways to measure individual modernity. Their works have proved to be significant.

In our attempt to measure individual modernity, 12 attitudinal items were derived in direct or modified form from the following authoritative sources: OM-6 Modernity Scale (Smith and Inkeles, 1966); The Chinese Traditional Western (T-W) Scale (Dawson, Law, Leung and Whitney, 1971); Modernism I and II (Kahl, 1968); The Filipino Traditional and Modern-Attitudinal Scale (Guthrie, 1970). The items employed in this study were selected on the basis that they were previously tested to have predicted power.

Detailed literature on modernization and the measurements of modernity can be referred to elsewhere (Fawcett, 1973; Fawcett, 1970; Freedman, 1963; Hawthorn, 1970; Inkeles and Smith, 1974). For the purpose of the present study, which did not intend to develop a measurement instrument, it suffices to apply some of the previously developed scales. Most of the major dimensions of modernity, particularly the fertility-related dimensions, were used to determine individual modernity of the Thai subjects of this study. These dimensions were:

(1) Religiosity

(2) Family modernism

(3) Status of male and female

(4) Fatalism or low stratification of life chance

(5) Openness to experience and change

(6) Integration with relatives

(7) Faith in science and technology.

All 12 selected items (see Table 29) were presented in a four-point Likert format scale: agree very much, agree a little, disagree a little and disagree very much. Responses on the scale were converted into scores ranging from 1 to 4 with high scores given to responses which indicated a modern attitude. The total possible scores an individual could receive fell between 12 and 48 points, with high points reflecting modernism and low points indicating traditionalism. The mean score of the individual modernity attitudinal questionnaires as earned by this sample of Thai women was 20.5. This average score indicates that the Thai women were more traditional than modern, since their mean score was below 30, the average score for a neutral point.

Since the average score of the Thai women in our sample skewed toward the traditional side, and we also found (as indicated in Table 29) that the mean score for each item was between 1.16 and 2.94, none of which reached 3.0, we decided to look at the relationship between individual modernity and fertility in a somewhat crude fashion and to move away from a direct use of the raw score of each individual. Instead, we dichotomized the respondents into those who scored above the mean of 20.5 and those below the mean. By dichotomization we were able to see more clearly how individual modernity is related to fertility. There was evidence that the individual modernity score is negatively correlated with fertility. That is to say that women who were more modern in attitude tended to have lower fertility than those who were more traditional. On the average, a woman who

Table 29. Individual Modernity Attitudinal Items

Attitudinal Item	Modernity Score	
	Mean	SD
1. RELIGIOSITY		
1. Man cannot be good without religion	1.40	.85
2. FAMILY MODERNISM		
2. A good wife should obey her husband	1.38	.70
3. If a husband and wife are unhappy together, it is better to divorce.	2.71	1.35
4. A good child should not argue with or talk back to the elders.	1.40	.87
5. A child should obey his parents even when he thinks they are wrong.	2.18	1.30
6. Divorce brings disgrace to the family and relatives.	1.68	1.17
3. STATUS OF THE MALE AND FEMALE		
7. Men, by nature, are more intelligent and competent than women.	1.78	1.13
8. It is reasonable that women receive lower pay than men for the same kind of work.	1.99	1.28
4. FATALISM		
9. Men are born with unequal "Wasana" (close equivalent to destiny)	1.16	.53
5. OPENNESS TO EXPERIENCE AND CHANGE		
10. Customs and traditions should not be changed at all.	1.33	.82
6. INTEGRATION WITH RELATIVES		
11. One should always consider the opinion of relatives and significant others in making decisions.	1.79	1.11
7. FAITH IN SCIENCE AND TECHNOLOGY		
12. Between the doctor and old people-- sometimes old people understand illness best.	2.94	1.23

Note: Item sources:
a) Item 1, 8 and 11 from D.H. Smith and A. Inkeles (1966).
b) Items 2 and 3 from J.A. Kahl (1968).
c) Items 4, 5 and 12 from G.M. Guthrie (1970).
d) Item 7 from Dawson, Law, Leung, & Whitney (1971).
e) Items 6, 9 and 10 modified from several studies on Thai culture.

was placed above the group average in the individual modernity had only 2.8 children, as compared with 3.5 for one who was below average. This difference of 25 percent is clearly significant at 0.02 level by the t-test method. Furthermore we found that individuals who were more modern were more likely to use contraceptives. This part of the finding is consistent with the results on the fertility behavior.

After looking at the overt fertility behavior, it may be of particular interest to look at the reasons given on fertility decision related questions. When asked the reason for practicing contraception, we found an interesting pattern of responses. Individuals who were above average in the modernity score had a slight tendency to think more of social and psychological factors, other than economic factors. In other words, they were more concerned with the quality, education and the like of their children as compared to those of their neighbors and close friends. While financial costs of children were the main concern for most mothers, those who were more modern were also concerned with opportunity costs of children, such as the obstacle to gainful employment, job advancement and professional development. This difference may be due, in part, to the fact that those who were more modern were more likely to be better educated. And more educated women were more likely to be able to enter the labor force, especially into those occupations outside the area of agriculture.

Understanding the reason for limiting family size by modernity level allows us to understand how children were viewed by women of different modernity levels. We were able to learn that children had less economic value for those who were more modern, but rather more of social and psychological values. However, a large family may not necessarily mean a greater social and psychological utilization of children. Therefore, it was no surprise to find that those who were more modern also had a small family.

Another interesting topic we looked at is how the decision to have children was formulated. About 69 percent of the women who were placed above average modernity expressed that they had formed the ideal family size since before they were married, compared to only about 61 percent for those who were below average. While this difference was not significant by a chi-square test, it suggested that modern women were more likely to formulate the ideal family size prior to actual marriage. But once they were married they were also more likely to talk and exchange ideas with their husbands on the topic of family building and size. A result from an analysis of our study found that only 17.5 percent of above average modernity women never consulted with the husbands, compared with 25.6 percent for those below average in modernity. The consulation, if not conversation, in many cases brought disagreement, rather than agreement, on the ideal family size between husband and wife. This was slightly more true for those who were more modern than for those who were more traditional. About 19 percent of those who were above average on modernity disagreed with their husbands on the number of children they (husbands) would like to have. The comparison of the proportion of wives who preferred a different number of children from their husbands in the two modernity groups found about 9 percent lower in the low group. This finding suggests that wives who were modern were more likely to be independent of their husbands in their ideas. It by no means should be construed that wives who were more modern were more likely to disagree with their husbands on the ideal family size. In the light of this interpretation, it should be noted also that a chi-square test found no statistical difference in terms of agreement (or disagreement) by modernity level. Thus our interpretation here should be taken more as suggestive than conclusive.

Consistent with our finding that women who were more modern were less concerned with the economic values (utility) of children, was the finding on the topic regularly brought up in conversation between the married couples. A smaller proportion of wives who were modern, as compared to those who were more traditional, reported economic subjects, such as the ways to make a living, as the topics most often discussed. The percentage was 74.5 for the former group and 90.5 for the latter. Modern wives showed that they more frequently talked about the future of their children, including educational plans and their possible careers. In addition and outside of the context of family affairs, they were more likely to talk about social and ideological topics, for example, politics and community affairs. A chi-square test indicated that the patterns of choosing topics of conversation and discussion in the family were significantly different at 0.01 level.

Another way of understanding the decision to have a child is to analyze how women with different modernity levels view the utility of having a large number of children. It was found that modern women were more likely to report that there were no advantages to having a large number of children. And as we have mentioned, among those who thought there were advantages in having many children, traditional women were more likely to equate the number of children with economic function. In other words, they thought that the more children they had the more hands they got in all kinds of family work. Only a few mentioned companionship and warmth in the family as the major utility of children. However, modern women were more likely to report children as one of their security blankets in old age. They believed that having many children, such as three more more, would assure them that they would have at least one child around to live with and help them in their old age. Applying a chi-square test to the responses found a statistical difference at 0.001 level.

As we were in doubt whether parents were certain that their children would help them in the way they desired, we asked a small number of women in our separate depth interviews, "Are you certain that your children would help you or support you in old age?" We were able to note that most of the women were not certain that they would receive what they expected from their children. Some cases even emphatically said that they did not expect so. But some suggested that while some parents looked for their children as the source of their security in old age, at the same time they realized that their children might not be the most reliable source of economic security. Still some women, especially those who were modern, looked for their children as more of a source of psychological security. In our analysis when we touched upon the non-economic values of children, we were able to note that more modern women emphasized the comfort and companionship provided by children. Thus for modern women, the psychological and emotional benefits of children came to mind more readily than the practical or economic aspects of security.

Applying Fishbein's Model to Fertility Decision

According to Fishbein's (1972) model, a person's intention to perform a behavior (in this study having a child) is determined (a) by her beliefs about the consequences of performing the behavior and the value of these consequences for the individual, and (b) by her beliefs about what relevant others think she should do and her motivation to comply with those others. Algebraically, the model and the specific variables involved in these inter-relations may be expressed as follows:

$$BI = \left(\sum_{i=1}^{m} B_i a_i\right) W_1 + \left(\sum_{i=1}^{m} NB_i \; MC_i\right) W_2$$

BI = the behavioral intention, B_i = the belief that performance of the behavior will lead to some consequence "X_i," a_i = the value of "X_i" to the individual, NB_i = the belief that a relevant other "Y_i" thinks one should or should not perform the behavior, MC_i = the motivation to comply with "Y_i," and W_1 and W_2 are weights reflecting the relative importance of each component in the determination of BI.

Fishbein's model is an additive model of two important components: attitudinal influence and normative influence. The first component on the right-hand side of the equation deals with an individual's beliefs about what will occur if she performs the behavior in question, in this case having a child. The second component on the right-hand side of the equation deals with an individual's normative beliefs about performing a given behavior. Specifically, the component is composed of a person's beliefs of what certain referents think she should do (e.g., my husband thinks we should have a small family) and her motivation for complying with those referents.

In summary, Fishbein's model suggests that two factors are the major determinants of intentions: a personal or attitudinal factor and a social or normative factor. The importance of each of these influences in determining intentions is expected to vary as a function of the type of behavior and/or individual under consideration. For some behaviors and individuals, intentions will be determined solely by attitudinal factors, while for other behaviors, intentions will be determined solely by normative factors. Still other behaviors will be determined by both. In reviewing recent fertility literature, Namboodiri and Pope (1968) point out two different approaches to explain fertility: one based on utility and the other on norms. The economic approach (e.g., Becker, 1960; Easterline, 1969) is based on a utility model of behavior. The sociological approach (e.g., Blake, 1968b; Duesenberry, 1960) is based on adherence to social norms. According to Namboodiri and Pope (1968), it is not clear under what conditions one of these approaches becomes more suitable for the explanatory analysis of fertility. Fishbein's model presented here incorporates both a subjective expected utility component and a normative component.

Therefore, for the purpose of our study the question of which approach is more suitable is of minimal importance here. According to Fishbein (1967), the two components of the model are the sole determinants of intentions. Personality variables, demographic variables, and other psychological and sociological variables can only influence intentions (and hence behavior) indirectly. Any effects these variables have on intentions are mediated by the attitudinal and normative components of the model. Analyzing within the context of this theoretical framework, the purpose of this section is to see how fertility decisions were made by the influences of (a) individual beliefs and (b) normative beliefs. As mentioned before, the design of this study is ex post facto. Therefore we are not dealing with fertility intention per se but, moving one step further, with actual fertility behavior.

In an attempt to formalize the decision of having children according to Fishbein's model, two sets of items of likert-type, one of which is to measure attitudinal beliefs and the other to measure normative beliefs, were constructed. The responses on each item ranged from strongly agree, agree, qualified agree (in between), disagree, and strongly disagree. Responses for each item were converted into scores ranging from 1 to 5, with a high score given to favorable responses. On each item we also asked the value of the consequence (X_i), or the degree of importance of that consequence of having children in general, as judged by each respondent. The information on the degree of importance served, where it was appropriate, as both a_i and MC_i. In terms of weighting the relative importance of the two components on the right hand side of the equation, we applied an equal weighting procedure. Our decision to assign an equal weight to each component stemmed from the rationale that both attitudinal beliefs and normative beliefs may in fact be inextricably intertwined in the mind and thought processes of human beings before any fertility decisions were realized. Applying an unequal weighting procedure would imply that we had some basic information to decide how each component operated and varied. In the absence of this information, an equal weighting procedure was applied derived at the BI, the additive summation of the two components.

Upon completion of the calculation of the BI, the method of correlation analysis was employed to determine the magnitude of fitness between variation in the sum scores of attitudinal and normative beliefs as constructed under Fishbein's model and actual fertility behavior. But before proceeding to the analysis, the items purported to measure attitudinal beliefs and normative beliefs are listed as follows:

A. Attitudinal beliefs

1. Having children gives parents a feeling of happiness.
2. One of the best things about having children is the chance to play with the children.
3. One of the best things about having children is the love a person can receive from their children.
4. One of the best things about having children is that you will never be lonely.
5. Having children makes a person become more responsible.
6. Having children gives you hope that yourself will be extended after your death.
7. Having children gives you hope of happiness with any success that your children may achieve.
8. Having children enables a woman to have a complete life.
9. Having children does not create any problems of child-care as the elder ones take care of the younger ones.
10. One of the best things about having children is that it makes a stronger bond between husband and wife.
11. One of the best things about having children is that it ensures you that there will be someone to inherit and carry on the family tradition.
12. Having children makes a woman look old.

13. Having children forces you to give up a lot of things you enjoy.

14. Having children is an obstacle for gainful employment of the mother.

B. Normative beliefs

1. Having children compels one to work hard so that he (she) can achieve more in one's career.

2. One of the best things about having children is that it ensures that someone will take care of you in your old age.

3. One of the best things about having children is that they will help you in making a living.

4. Good children should help parents in various chores if they can.

5. Children should provide remittances to the parents when the children go to work.

6. Having children is a way of making sure that your family name continues.

7. Having children makes a stronger bond among the relatives and clan.

8. Having children creates a financial burden for the family.

The responses to these two sets of items were converted into scores, and subsequently the sum scores of attitudinal and normative beliefs for each individual were calculated. Each individual's score was used to find the product-moment-correlation with: the number of children ever born, age, duration of marriage, education and individual score. Table 30 indicates that there was a correlation of 0.10 between the sum score of attitudinal and normative beliefs. This magnitude of correlation indicates that both attitudinal and normative beliefs together explain only one

percent of the variance in fertility. In other words, with Fishbein's model we understand only about one percent of the total fertility decisions among Thai women. At the same time we noted the high relationship between age and marriage duration. Furthermore, the relationship among education, individual modernity and sum scores of attitudinal and normative beliefs were moderately high, indicating a moderate inter-relationship among the three. In terms of the path of relationship, education exerted its influence through individual modernity and the sum scores of attitudinal and normative beliefs. In light of this moderate inter-relationship, attitudinal and normative beliefs might even explain less than one percent of the fertility decisions. In fact, the total correlation between fertility and the sum of the attitudinal and normative effects was reduced to only 0.04 when we controlled for education and modernity. This finding suggests that a decision to have any specified number of children is influenced more by education then attitudinal and normative beliefs. If attitudinal and normative beliefs have any effects on fertility, they are mediated by education. The education variable is broad and it includes the individual's ideology and philosophy in life. Therefore, a woman who is more independent in ideas should reflect a stronger educational influences on any decisions she may have made, than does one who is more dependent on others. This interpretation is substantiated by the demonstration of a stronger correlation between the sum scores of attitudinal and normative beliefs and fertility, after controlling the effects of education, among those women who reported that they had to listen to their husbands in deciding how many children they should have, than among those who reported that they decided the number on their own. The partial correlation was 0.09 for the former group, as compared to only 0.2 for the latter.

Table 30. Correlation Matrices of Number of Children Ever Born, Age, Duration of Marriage, Education, Individual Modernity Score and Sum Score of Attitudinal and Normative Beliefs

Variable	No. of Children	Age	Duration of Marriage	Education	Modernity Score	Sum Scores of Attitudinal and Normative Beliefs
No. of Children	--	0.62	0.72	-0.23	-0.08	0.10
Age		--	0.89	-0.14	-0.05	0.06
Duration of Marriage			--	-0.25	-0.12	0.09
Education				--	0.51	-0.30
Modernity Score					--	-0.21
Sum Scores of Attitudinal and Normative Beliefs						--

CHAPTER V

CONCLUSION

Summary

A sample of 305 ever married women, aged 15-49 from two provinces, Nongkai and Lumpoon, were selected for interviews on the subject of fertility decision and the reasons which led to a desire to have children.

On the average, the women in our sample had 3.2 children. About 76.4 percent of them ever used some methods of contraception. Most of them used the pill; and female sterilization was the second popular method.

In terms of family decisions our data indicates that almost all Thai couples planned their family size and chose the time they would like to have their children well in advance before they pursued the fertility goal. The fertility decisions that the women made were not totally independent of any sources of influence. Relatives and friends and neighbors were quite important and could exert some influence on the decisions of the women. This indicates that having children may be influenced by a normative pattern which the members of a society should observe. In our case, it was found that there was a norm of family size of three children. This norm was couched in terms of the size that is neither too large nor too small, and it is within the range that quality children can be realistically brought up.

Aside from relatives, friends and neighbors, parents and husbands also had some influence on the decisions of a significant proportion of women. Their influence seems to be characterized along with those of relatives by a close and tight family interaction.

If we look at the general picture of what led the women to decide to have children, we see a mixture of several interwoven factors. While economic factors may visibly stand out in front, it cannot be felt alone without the support of several other factors, most notably social and psychological ones. There were indications that several factors, at one point under one condition, were conducive to high fertility; but usually they were countered by several other fertility depressing factors. Judging from the responses, there was some confusion in the minds of the respondents. They found it very difficult to differentiate the advantages from the disadvantages of having many children. More modern women were somewhat more capable in making any differentiation and deciding what were their desires or goals in life. Under any circumstances, more modern women looked for more psychological gratification from having children in the family. Less modern women looked more for economic benefits, but still would not deny any social and psychological gratifications.

It is important to note and mention some of the mixed feelings and attitudes and perceptions of having children that were depicted by some of the respondents: Children were perceived as assets but they are consumptive assets; Children may very well be an important condition in creating an atmosphere of tender love and care in the family and making life worth living, but parents also at the same time or at one time or another have to go through and cope with the ordeal of emotional and physical strains in child rearing. Children may bring hope for future success or even an extension of self but the present time must be contemplated first, or else children may not live for tomorrow. Children may help man become more responsible, but some just do not want to have any responsibility. These are some of the responses that substantiate that there are multi-factors and multi-dimensions involved in the decision to have children. These multi-factors and multi-dimensions have unavoidably obfuscated the understanding of the fertility decision.

An attempt to formalize several inextricably interwoven factors was carried out under Fishbein's model of understanding behavioral decision. However, only a little understanding of fertility behavior was achieved. On the whole we can explain only one percent of the decisions made by the Thai women. This small achievement is thought to be accounted for by two main reasons. First, we simply did not penetrate deeply and broadly enough into other realms of life; there were so many other things that we left out of the model. Second, the model in itself was too specific in scope. It only touches upon beliefs. There are many other aspects of psychology that we need to take into consideration before understanding any decisions. For example, attitude, value, needs, and motivation should be incorporated into the model so that a larger magnitude of variances in fertility decisions can be explained.

Policy Implication

We have not reached the point where we can predict fertility decisions in the fashion that is most often an ultimate goal in the scientific field of population. This strong desire for prediction has its policy implications for understandable reasons under the scaffolding of population control and management.

At present, Thailand's population growth rate is estimated at about 2.1 percent per annum (Kamnuansilpa, 1979). This rate of growth can still continue to create and exacerbate a number of problems which retard the social and economic development of the country. For this reason the Thai government will continue its support for the efforts to reduce fertility through voluntary practice of family planning. At present, the National Economic and Social Development Board is contemplating a plan to reduce the population growth to 1.5 percent by 1986. Thus, the process of fertility reduction can be greatly facilitated by an understanding of fertility decisions.

We found that financial and opportunity costs of children were considered to be the major disadvantage in having a large number of children. The costs of children are operating in the direction of reducing fertility. At the same time, the pension motive or the need to be secure in old age creates a desire for more progeny, which of course, is conducive to population growth. Still children were considered by many to have economic utility, but not without some cost, namely financial, social and psychological. We found that married Thai women or Thai couples, to be more general, did not make any fertility decisions on account of any single factor or dimension. Therefore it seems to us that, based on the results of the findings here, it is unimaginative to implicate any fertility reducation plans, based on any single factor, be it economic, social or psychological in nature. What is suggested here is that several factors have to be taken into consideration in the implementation of any fertility control program.

Since it is more in the interest of the population policy planners to look at the factors that are conducive to high fertility, we can disregard those that are depressant, at least until the country changes its policy stance from anti-natalist to pro-natalist. The first thing that we will look at is the economic utility of children. Children were perceived to be particularly useful, in a productive sense, in agricultural communities where farms are large but mechanization is low, and educational opportunities are limited or lagging. In this situation Arnold and Pejaranonda (1977) suggested that government policies could accelerate the decline in productive utility by fostering strong child labor, and increasing educational opportunities. The first of these policies would make children less necessary for productive help, and the last two policies would make children less available to help. All of these policies are desirable in their own right. Their positive effect on fertility control programs make their implementation more urgent.

The next aspect we will look at is the social context of fertility. We have learned that there is a strong impulse, if not a clear norm, among the Thai to bring up "quality" children. The desire to see children successful in life is omnipresent. Education is one of the important credentials necessary for entering many, if not all, careers. Putting these together, we suggest a policy for increasing school enrollment at all levels. One way of achieving this is to increase the minimum amount of compulsory education and provide better access to education at the local level. This policy would have at least three anti-natalist effects. First, by keeping children in school longer they would be kept out of the labor force longer, thus reducing the amount of time they could devote to working. Secondly, producing better educated and higher "quality" children would mean that a smaller number of children per family would be more compatable with the costs entailed. Finally, higher levels of education tend to expose children to modern ideas and philosophies which would undoubtedly lead to lower fertility when these children reach childbearing age.

In a psychological context, the warmth and security, particularly in old age, for having children is one of the most difficult things to operate in the policy package. The warmth and gratification of having children and being with them can only be dealt with indirectly by introducing an element of family education into the school curriculum. With this so-called family education we can reorient the younger generation so that a better family environment and interaction can be realized. Perhaps the designed information that with only two children parents can more nearly project themselves into the future of the children, or with a small family a closer relationship and attention can be maintained, should be directed to the future parents of Thailand.

In terms of security, however, there may be an element of economic security or pension motive involved. The government should design a program of provision for alternative sources of security. These sources of security could take the form of public or private social security and pensions plans, unemployment and health insurance, or even better housing and medical care for the elderly. While such plans might be difficult to implement in Thailand because the Thai economy is heavily based on agriculture, the government should at least start and accelerate some similar welfare or security programs that are in the interests of the elderly. Psychologically, the government should make an effort to change the perception that the state will not be active in taking care of the aged, and that it is only within the responsibility of each individual family to take care of the aged. Research has indicated that the Thai family has been the only institution which is active and functional for the needs of the aged (Kamnuansilpa, Kamalanavin and Ragthaidee, 1980). There were indications that while some parents may not put too much hope on their children as the most reliable source of security, at the same time they realized that there was no alternative source that they could look or hope for. Given the fact that fertility rates have been declining in Thailand, the proportion of the aged population has been inevitably increasing. As the aging process of the population is underway, the needs of the elderly should be taken into consideration and included or incorporated into the national development plans. The provision of at least some basic needs will, in the long run, reduce the desire for a large family.

In summary, we have suggested the ways in which policies supportive of a low level of fertility in Thailand can be implemented. In short, we have suggested that better educational opportunities, stricter child labor laws, more rapid mechanization of agriculture and the provisions of social security and welfare benefits for the elderly be implemented. All these together could most likely reduce the desire for children, thus keeping the level of fertility down. The important factor for the success of the population control program in Thailand is to keep the number of desired children down to no more than two per family.

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SEAPRAP

THE SOUTHEAST ASIA POPULATION RESEARCH AWARDS PROGRAM

PROGRAM OBJECTIVES

* To strengthen the research capabilities of young Southeast Asian social scientists, and to provide them with technical support and guidance if required.

* To increase the quantity and quality of social science research on population problems in Southeast Asia.

* To facilitate the flow of information about population research developed in the program as well as its implications for policy and planning among researchers in the region, and between researchers, government planners and policy makers.

ILLUSTRATIVE RESEARCH AREAS

The range of the research areas include a wide variety of research problems relating to population, but excludes reproductive biology. The following are some examples of research areas that could fall within the general focus of the Program:

* Factors contributing to or related to fertility regulation and family planning programs; familial, psychological, social, political and economic effects of family planning and contraception.

* Antecedents, processes, and consequences (demographic, cultural, social, psychological, political, economic) of population structure, distribution, growth and change.

* Family structure, sexual behaviour and the relationship between child-bearing patterns and child development.

* Inter-relations between population variables and the process of social and economic development (housing, education, health, quality of the environment, etc).

* Population policy, including the interaction of population variables and economic policies, policy implications of population distribution and movement with reference to both urban and rural settings, and the interaction of population variables and law.

* Evaluation of on-going population education programs and/or development of knowledge-based population education program.

* Incentive schemes — infrastructures, opportunities; overall economic and social development programs.

SELECTION CRITERIA

Selection will be made by a Program Committee of distinguished Southeast Asian scholars in the social sciences and population. The following factors will be considered in evaluating research proposals:

1. relevance of the proposed research to current issues of population in the particular countries of Southeast Asia;
2. its potential contribution to policy formation, program implementation, and problem solving;
3. adequacy of research design, including problem definition, method of procedure, proposed mode of analysis, and knowledge of literature;
4. feasibility of the project, including time requirement; budget; and availability, accessibility, and reliability of data;
5. Applicant's potential for further development.

DURATION AND AMOUNT OF AWARDS

Research awards will be made for a period of up to one year. In exceptional cases, requests for limited extension may be considered. The amount of an award will depend on location, type and size of the project, but the maximum should not exceed US$7,500.

QUALIFICATIONS OF APPLICANTS

The Program is open to nationals of the following countries: Burma, Indonesia, Kampuchea, Laos, Malaysia, Philippines, Singapore, Thailand and Vietnam. Particular emphasis will be placed on attracting young social scientists in provincial areas.

Applications are invited from the following:

* Graduate students in thesis programs

* Faculty members

* Staff members in appropriate governmental and other organizations.

Full-time commitment is preferable but applicants must at least be able to devote a substantial part of their time to the research project. Advisers may be provided, depending on the needs of applicants.